

June 14, 2016

## Report to:

Rochelle Destrampe  
Golder Associates  
1430 W Broadway Road  
Suite 108  
Tempe, AZ 85282

## Bill to:

Rochelle Destrampe  
Golder Associates  
1430 W Broadway Road Suite 108  
Tempe, AZ 85282

Project ID: 1547878.300

ACZ Project ID: L30572

## Rochelle Destrampe:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on May 20, 2016. This project has been assigned to ACZ's project number, L30572. Please reference this number in all future inquiries.

All analyses were performed according to ACZ's Quality Assurance Plan. The enclosed results relate only to the samples received under L30572. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute.

Except as noted, the test results for the methods and parameters listed on ACZ's current NELAC certificate letter (#ACZ) meet all requirements of NELAC.

This report shall be used or copied only in its entirety. ACZ is not responsible for the consequences arising from the use of a partial report.

All samples and sub-samples associated with this project will be disposed of after July 14, 2016. If the samples are determined to be hazardous, additional charges apply for disposal (typically \$11/sample). If you would like the samples to be held longer than ACZ's stated policy or to be returned, please contact your Project Manager or Customer Service Representative for further details and associated costs. ACZ retains analytical raw data reports for ten years.

If you have any questions or other needs, please contact your Project Manager.



Scott Habermehl has reviewed  
and approved this report.



Golder Associates

June 14, 2016

Project ID: 1547878.300

ACZ Project ID: L30572

**Sample Receipt**

ACZ Laboratories, Inc. (ACZ) received 1 ground water sample from Golder Associates on May 20, 2016. The sample was received in good condition. Upon receipt, the sample custodian removed the sample from the cooler, inspected the contents, and logged the sample into ACZ's computerized Laboratory Information Management System (LIMS). The sample was assigned ACZ LIMS project number L30572. The custodian verified the sample information entered into the computer against the chain of custody (COC) forms and sample bottle labels.

**Holding Times**

Any analyses not performed within EPA recommended holding times have been qualified with an "H" flag.

**Sample Analysis**

This sample was analyzed for inorganic, organic, radiochemistry parameters. The individual methods are referenced on both, the ACZ invoice and the analytical reports. The extended qualifier reports may contain footnotes qualifying specific elements due to QC failures. In addition the following has been noted with this specific project:

1. Suspect analytes have been re-analyzed to verify the cation-anion balance relationship. Similar levels of constituents found in last quarters sample as well.

**Golder Associates**

Project ID: 1547878.300  
Sample ID: DW-03

ACZ Sample ID: **L30572-01**  
Date Sampled: 05/18/16 08:20  
Date Received: 05/20/16  
Sample Matrix: *Ground Water*

**Inorganic Prep**

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Total Hot Plate Digestion	M200.2 ICP-MS								05/24/16 19:40	mfm

**Metals Analysis**

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	2	366			mg/L	0.06	0.3	05/23/16 16:28	aeb
Antimony, dissolved	M200.8 ICP-MS	2		U		mg/L	0.0008	0.004	05/25/16 23:04	msh
Arsenic, dissolved	M200.8 ICP-MS	2	0.0017	B		mg/L	0.0004	0.002	05/24/16 22:06	msh
Barium, dissolved	M200.7 ICP	2	0.023	B		mg/L	0.006	0.03	05/23/16 16:28	aeb
Beryllium, dissolved	M200.8 ICP-MS	10	1.3900			mg/L	0.0005	0.003	05/26/16 20:59	msh
Cadmium, dissolved	M200.8 ICP-MS	2	0.0770			mg/L	0.0002	0.001	05/24/16 22:06	msh
Calcium, dissolved	M200.7 ICP	2	571	*		mg/L	0.2	1	05/23/16 16:28	aeb
Chromium, dissolved	M200.8 ICP-MS	2		U		mg/L	0.001	0.004	05/24/16 22:06	msh
Cobalt, dissolved	M200.7 ICP	2	0.07	B		mg/L	0.02	0.1	05/23/16 16:28	aeb
Copper, dissolved	M200.7 ICP	2	5.81			mg/L	0.02	0.1	05/23/16 16:28	aeb
Iron, dissolved	M200.7 ICP	2	0.07	B		mg/L	0.04	0.1	05/23/16 16:28	aeb
Lead, dissolved	M200.8 ICP-MS	2	0.0127			mg/L	0.0002	0.001	05/24/16 22:06	msh
Magnesium, dissolved	M200.7 ICP	2	208			mg/L	0.4	2	05/23/16 16:28	aeb
Manganese, dissolved	M200.7 ICP	2	17.30			mg/L	0.01	0.05	05/23/16 16:28	aeb
Mercury, dissolved	M245.1 CVAA	1	0.0025			mg/L	0.0002	0.001	05/26/16 11:04	scp
Molybdenum, dissolved	M200.7 ICP	2		U		mg/L	0.04	0.2	05/23/16 16:28	aeb
Nickel, dissolved	M200.7 ICP	2	0.21			mg/L	0.02	0.08	05/23/16 16:28	aeb
Potassium, dissolved	M200.7 ICP	2	8.5			mg/L	0.4	2	05/23/16 16:28	aeb
Selenium, dissolved	M200.8 ICP-MS	2	0.0275			mg/L	0.0002	0.0005	05/24/16 22:06	msh
Silica, dissolved	M200.7 ICP	2	46.8			mg/L	0.4	2	05/23/16 16:28	aeb
Silver, dissolved	M200.8 ICP-MS	2		U		mg/L	0.0001	0.0005	05/24/16 22:06	msh
Sodium, dissolved	M200.7 ICP	2	176			mg/L	0.4	2	05/23/16 16:28	aeb
Thallium, dissolved	M200.8 ICP-MS	2		U		mg/L	0.0002	0.001	05/24/16 22:06	msh
Uranium, total	M200.8 ICP-MS	2	0.0501			mg/L	0.0002	0.001	05/25/16 19:18	mfm
Zinc, dissolved	M200.7 ICP	2	10.0			mg/L	0.02	0.1	05/23/16 16:28	aeb

**Golder Associates**

Project ID: 1547878.300  
Sample ID: DW-03

ACZ Sample ID: L30572-01  
Date Sampled: 05/18/16 08:20  
Date Received: 05/20/16  
Sample Matrix: Ground Water

**Wet Chemistry**

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO <sub>3</sub>	SM2320B - Titration									
Bicarbonate as CaCO <sub>3</sub>		1	29.9			mg/L	2	20	05/21/16 0:00	sck
Carbonate as CaCO <sub>3</sub>		1		U		mg/L	2	20	05/21/16 0:00	sck
Hydroxide as CaCO <sub>3</sub>		1		U		mg/L	2	20	05/21/16 0:00	sck
Total Alkalinity		1	29.9			mg/L	2	20	05/21/16 0:00	sck
Cation-Anion Balance	Calculation									
Cation-Anion Balance			15.0			%			06/14/16 0:00	calc
Sum of Anions			71			meq/L			06/14/16 0:00	calc
Sum of Cations			96			meq/L			06/14/16 0:00	calc
Chloride	M300.0 - Ion Chromatography	50	57.9	B	*	mg/L	25	125	05/27/16 5:40	bsu
Conductivity @25C	SM2510B	1	4260			umhos/cm	1	10	05/21/16 2:07	sck
Fluoride	SM4500F-C	1	12.0		*	mg/L	0.05	0.3	05/25/16 13:13	abd
Nitrate as N, dissolved	Calculation: NO <sub>3</sub> NO <sub>2</sub> minus NO <sub>2</sub>		1.96	H		mg/L	0.02	0.1	06/14/16 0:00	calc
Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	1	1.96	H	*	mg/L	0.02	0.1	05/20/16 20:25	pjb
Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	1		UH	*	mg/L	0.01	0.05	05/20/16 20:25	pjb
pH (lab)	SM4500H+ B									
pH		1	5.2	H		units	0.1	0.1	05/21/16 0:00	sck
pH measured at		1	23.8			C	0.1	0.1	05/21/16 0:00	sck
Phosphate	Calculation based on dissolved Ortho Phosphorus			U		mg/L	0.06	0.2	06/14/16 0:00	calc
Phosphorus, ortho dissolved	M365.1 - Automated Ascorbic Acid	1		UH	*	mg/L	0.02	0.05	05/20/16 20:31	pjb
Residue, Filterable (TDS) @180C	SM2540C	2	6030		*	mg/L	20	40	05/25/16 15:35	emk
Sulfate	M300.0 - Ion Chromatography	50	3240			mg/L	25	125	06/02/16 18:31	mss2
TDS (calculated)	Calculation		4760			mg/L			06/14/16 0:00	calc
TDS (ratio - measured/calculated)	Calculation		1.27						06/14/16 0:00	calc

**Arizona license number: AZ0102**

**Report Header Explanations**

<i>Batch</i>	A distinct set of samples analyzed at a specific time
<i>Found</i>	Value of the QC Type of interest
<i>Limit</i>	Upper limit for RPD, in %.
<i>Lower</i>	Lower Recovery Limit, in % (except for LCSS, mg/Kg)
<i>MDL</i>	Method Detection Limit. Same as Minimum Reporting Limit unless omitted or equal to the PQL (see comment #5). Allows for instrument and annual fluctuations.
<i>PCN/SCN</i>	A number assigned to reagents/standards to trace to the manufacturer's certificate of analysis
<i>PQL</i>	Practical Quantitation Limit. Synonymous with the EPA term "minimum level".
<i>QC</i>	True Value of the Control Sample or the amount added to the Spike
<i>Rec</i>	Recovered amount of the true value or spike added, in % (except for LCSS, mg/Kg)
<i>RPD</i>	Relative Percent Difference, calculation used for Duplicate QC Types
<i>Upper</i>	Upper Recovery Limit, in % (except for LCSS, mg/Kg)
<i>Sample</i>	Value of the Sample of interest

**QC Sample Types**

<i>AS</i>	Analytical Spike (Post Digestion)	<i>LCSWD</i>	Laboratory Control Sample - Water Duplicate
<i>ASD</i>	Analytical Spike (Post Digestion) Duplicate	<i>LFB</i>	Laboratory Fortified Blank
<i>CCB</i>	Continuing Calibration Blank	<i>LFM</i>	Laboratory Fortified Matrix
<i>CCV</i>	Continuing Calibration Verification standard	<i>LFMD</i>	Laboratory Fortified Matrix Duplicate
<i>DUP</i>	Sample Duplicate	<i>LRB</i>	Laboratory Reagent Blank
<i>ICB</i>	Initial Calibration Blank	<i>MS</i>	Matrix Spike
<i>ICV</i>	Initial Calibration Verification standard	<i>MSD</i>	Matrix Spike Duplicate
<i>ICSAB</i>	Inter-element Correction Standard - A plus B solutions	<i>PBS</i>	Prep Blank - Soil
<i>LCSS</i>	Laboratory Control Sample - Soil	<i>PBW</i>	Prep Blank - Water
<i>LCSSD</i>	Laboratory Control Sample - Soil Duplicate	<i>PQV</i>	Practical Quantitation Verification standard
<i>LCSW</i>	Laboratory Control Sample - Water	<i>SDL</i>	Serial Dilution

**QC Sample Type Explanations**

Blanks	Verifies that there is no or minimal contamination in the prep method or calibration procedure.
Control Samples	Verifies the accuracy of the method, including the prep procedure.
Duplicates	Verifies the precision of the instrument and/or method.
Spikes/Fortified Matrix	Determines sample matrix interferences, if any.
Standard	Verifies the validity of the calibration.

**ACZ Qualifiers (Qual)**

<i>B</i>	Analyte concentration detected at a value between MDL and PQL. The associated value is an estimated quantity.
<i>H</i>	Analysis exceeded method hold time. pH is a field test with an immediate hold time.
<i>L</i>	Target analyte response was below the laboratory defined negative threshold.
<i>U</i>	The material was analyzed for, but was not detected above the level of the associated value.
	The associated value is either the sample quantitation limit or the sample detection limit.

**Method References**

- (1) EPA 600/4-83-020. Methods for Chemical Analysis of Water and Wastes, March 1983.
- (2) EPA 600/R-93-100. Methods for the Determination of Inorganic Substances in Environmental Samples, August 1993.
- (3) EPA 600/R-94-111. Methods for the Determination of Metals in Environmental Samples - Supplement I, May 1994.
- (4) EPA SW-846. Test Methods for Evaluating Solid Waste.
- (5) Standard Methods for the Examination of Water and Wastewater.

**Comments**

- (1) QC results calculated from raw data. Results may vary slightly if the rounded values are used in the calculations.
- (2) Soil, Sludge, and Plant matrices for Inorganic analyses are reported on a dry weight basis.
- (3) Animal matrices for Inorganic analyses are reported on an "as received" basis.
- (4) An asterisk in the "XQ" column indicates there is an extended qualifier and/or certification qualifier associated with the result.
- (5) If the MDL equals the PQL or the MDL column is omitted, the PQL is the reporting limit.

For a complete list of ACZ's Extended Qualifiers, please click:

<http://www.acz.com/public/extqualist.pdf>

**Golder Associates**

 ACZ Project ID: **L30572**
**Alkalinity as CaCO<sub>3</sub>**
**SM2320B - Titration**

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG403366</b>													
WG403366PBW1	PBW	05/20/16 18:14				3.3	mg/L		-20	20			
WG403366LCSW3	LCSW	05/20/16 18:32	WC160512-7	820.0001		852	mg/L	104	90	110			
WG403366LCSW6	LCSW	05/20/16 22:15	WC160512-7	820.0001		858	mg/L	105	90	110			
WG403366PBW2	PBW	05/20/16 22:23				U	mg/L		-20	20			
WG403366LCSW9	LCSW	05/21/16 1:44	WC160512-7	820.0001		862	mg/L	105	90	110			
WG403366PBW3	PBW	05/21/16 1:52				U	mg/L		-20	20			
L30576-01DUP	DUP	05/21/16 3:30			147	165	mg/L				12	20	
WG403366LCSW12	LCSW	05/21/16 4:50	WC160512-7	820.0001		866	mg/L	106	90	110			
WG403366PBW4	PBW	05/21/16 4:59				U	mg/L		-20	20			
WG403366LCSW15	LCSW	05/21/16 8:28	WC160512-7	820.0001		870	mg/L	106	90	110			

**Aluminum, dissolved**
**M200.7 ICP**

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG403429</b>													
WG403429ICV	ICV	05/23/16 15:15	II160512-1		2	2.033	mg/L	102	95	105			
WG403429ICB	ICB	05/23/16 15:21				U	mg/L		-0.09	0.09			
WG403429LFB	LFB	05/23/16 15:33	II160516-4	1.0013		1.024	mg/L	102	85	115			
L30583-01AS	AS	05/23/16 16:37	II160516-4	1.0013	.07	1.104	mg/L	103	85	115			
L30583-01ASD	ASD	05/23/16 16:40	II160516-4	1.0013	.07	1.102	mg/L	103	85	115	0	20	

**Antimony, dissolved**
**M200.8 ICP-MS**

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG403581</b>													
WG403581ICV	ICV	05/25/16 22:11	MS160419-12	.02		.02074	mg/L	104	90	110			
WG403581ICB	ICB	05/25/16 22:14				U	mg/L		-0.0012	0.0012			
WG403581LFB	LFB	05/25/16 22:17	MS160510-5	.009980001		.01019	mg/L	102	85	115			
L30585-01AS	AS	05/25/16 23:17	MS160510-5	.009980001	U	.00945	mg/L	95	70	130			
L30585-01ASD	ASD	05/25/16 23:20	MS160510-5	.009980001	U	.00997	mg/L	100	70	130	5	20	

**Arsenic, dissolved**
**M200.8 ICP-MS**

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG403522</b>													
WG403522ICV	ICV	05/24/16 21:56	MS160419-12	.05		.05355	mg/L	107	90	110			
WG403522ICB	ICB	05/24/16 21:59				U	mg/L		-0.0006	0.0006			
WG403522LFB	LFB	05/24/16 22:03	MS160510-5	.0501		.04558	mg/L	91	85	115			
L30576-03AS	AS	05/24/16 22:18	MS160510-5	.1002	.0035	.10792	mg/L	104	70	130			
L30576-03ASD	ASD	05/24/16 22:21	MS160510-5	.1002	.0035	.10802	mg/L	104	70	130	0	20	

**Barium, dissolved**
**M200.7 ICP**

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG403429</b>													
WG403429ICV	ICV	05/23/16 15:15	II160512-1	2		1.9898	mg/L	99	95	105			
WG403429ICB	ICB	05/23/16 15:21				.0033	mg/L		-0.009	0.009			
WG403429LFB	LFB	05/23/16 15:33	II160516-4	.5005		.4968	mg/L	99	85	115			
L30583-01AS	AS	05/23/16 16:37	II160516-4	.5005	.042	.5375	mg/L	99	85	115			
L30583-01ASD	ASD	05/23/16 16:40	II160516-4	.5005	.042	.5553	mg/L	103	85	115	3	20	

**Golder Associates**

 ACZ Project ID: **L30572**
**Beryllium, dissolved**
**M200.8 ICP-MS**

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG403663</b>													
WG403663ICV	ICV	05/26/16 19:35	MS160419-12	.05		.04738	mg/L	95	90	110			
WG403663ICB	ICB	05/26/16 19:38			U	mg/L			-0.00015	0.00015			
WG403663LFB	LFB	05/26/16 19:41	MS160510-5	.0501		.04271	mg/L	85	85	115			
L30531-08AS	AS	05/26/16 20:34	MS160510-5	.1002	U	.09334	mg/L	93	70	130			
L30531-08ASD	ASD	05/26/16 20:37	MS160510-5	.1002	U	.0984	mg/L	98	70	130	5	20	

**Cadmium, dissolved**
**M200.8 ICP-MS**

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG403522</b>													
WG403522ICV	ICV	05/24/16 21:56	MS160419-12	.05		.05115	mg/L	102	90	110			
WG403522ICB	ICB	05/24/16 21:59			U	mg/L			-0.0003	0.0003			
WG403522LFB	LFB	05/24/16 22:03	MS160510-5	.05005		.04471	mg/L	89	85	115			
L30576-03AS	AS	05/24/16 22:18	MS160510-5	.1001	U	.09588	mg/L	96	70	130			
L30576-03ASD	ASD	05/24/16 22:21	MS160510-5	.1001	U	.09294	mg/L	93	70	130	3	20	

**Calcium, dissolved**
**M200.7 ICP**

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG403429</b>													
WG403429ICV	ICV	05/23/16 15:15	II160512-1	100		100.48	mg/L	100	95	105			
WG403429ICB	ICB	05/23/16 15:21			U	mg/L			-0.3	0.3			
WG403429LFB	LFB	05/23/16 15:33	II160516-4	68.01588		70.15	mg/L	103	85	115			
L30583-01AS	AS	05/23/16 16:37	II160516-4	68.01588	369	423.7	mg/L	80	85	115			M3
L30583-01ASD	ASD	05/23/16 16:40	II160516-4	68.01588	369	428.7	mg/L	88	85	115	1	20	

**Chloride**
**M300.0 - Ion Chromatography**

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG396749</b>													
WG396749ICV	ICV	01/05/16 18:18	WI151221-5	20.02		19.8	mg/L	99	90	110			
WG396749ICB	ICB	01/05/16 18:36			U	mg/L			-0.5	0.5			
<b>WG403718</b>													
WG403718LFB	LFB	05/26/16 21:36	WI151103-3	30		31.9	mg/L	106	90	110			
L30540-02DUP	DUP	05/27/16 2:23			127	127	mg/L				0	20	
L30540-03AS	AS	05/27/16 2:59	WI151103-3	1500	98.2	1680	mg/L	105	90	110			

**Chromium, dissolved**
**M200.8 ICP-MS**

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG403522</b>													
WG403522ICV	ICV	05/24/16 21:56	MS160419-12	.05		.05028	mg/L	101	90	110			
WG403522ICB	ICB	05/24/16 21:59			U	mg/L			-0.0015	0.0015			
WG403522LFB	LFB	05/24/16 22:03	MS160510-5	.05005		.0445	mg/L	89	85	115			
L30576-03AS	AS	05/24/16 22:18	MS160510-5	.1001	U	.0937	mg/L	94	70	130			
L30576-03ASD	ASD	05/24/16 22:21	MS160510-5	.1001	U	.0935	mg/L	93	70	130	0	20	

**Golder Associates**

 ACZ Project ID: **L30572**
**Cobalt, dissolved**
**M200.7 ICP**

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG403429</b>													
WG403429ICV	ICV	05/23/16 15:15	II160512-1	2.002		1.916	mg/L	96	95	105			
WG403429ICB	ICB	05/23/16 15:21			U	mg/L		-0.03	0.03				
WG403429LFB	LFB	05/23/16 15:33	II160516-4	.498		.487	mg/L	98	85	115			
L30583-01AS	AS	05/23/16 16:37	II160516-4	.498	U	.482	mg/L	97	85	115			
L30583-01ASD	ASD	05/23/16 16:40	II160516-4	.498	U	.499	mg/L	100	85	115	3	20	

**Conductivity @25C**
**SM2510B**

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG403366</b>													
WG403366LCSW2	LCSW	05/20/16 18:19	PCN48848	1408		1530	umhos/cm	109	90	110			
WG403366LCSW5	LCSW	05/20/16 22:02	PCN48848	1408		1480	umhos/cm	105	90	110			
WG403366LCSW8	LCSW	05/21/16 1:31	PCN48848	1408		1440	umhos/cm	102	90	110			
L30576-01DUP	DUP	05/21/16 3:30		3400	3390	umhos/cm					0	20	
WG403366LCSW11	LCSW	05/21/16 4:37	PCN48848	1408		1390	umhos/cm	99	90	110			
WG403366LCSW14	LCSW	05/21/16 8:15	PCN48848	1408		1400	umhos/cm	99	90	110			

**Copper, dissolved**
**M200.7 ICP**

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG403429</b>													
WG403429ICV	ICV	05/23/16 15:15	II160512-1	2		1.964	mg/L	98	95	105			
WG403429ICB	ICB	05/23/16 15:21			U	mg/L		-0.03	0.03				
WG403429LFB	LFB	05/23/16 15:33	II160516-4	.501		.496	mg/L	99	85	115			
L30583-01AS	AS	05/23/16 16:37	II160516-4	.501	U	.494	mg/L	99	85	115			
L30583-01ASD	ASD	05/23/16 16:40	II160516-4	.501	U	.517	mg/L	103	85	115	5	20	

**Fluoride**
**SM4500F-C**

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG403551</b>													
WG403551ICV	ICV	05/25/16 10:50	WC160518-1	2		1.927	mg/L	96	95	105			
WG403551ICB	ICB	05/25/16 10:55			U	mg/L		-0.15	0.15				
WG403551LFB1	LFB	05/25/16 11:02	WC160419-8	4.995		4.817	mg/L	96	90	110			
WG403551LFB2	LFB	05/25/16 13:05	WC160419-8	4.995		4.885	mg/L	98	90	110			
L30572-01AS	AS	05/25/16 13:21	WC160419-8	4.995	12	12.049	mg/L	1	90	110			M2
L30572-01DUP	DUP	05/25/16 13:29			12	11.876	mg/L				1	20	

**Iron, dissolved**
**M200.7 ICP**

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG403429</b>													
WG403429ICV	ICV	05/23/16 15:15	II160512-1	2		1.997	mg/L	100	95	105			
WG403429ICB	ICB	05/23/16 15:21			U	mg/L		-0.06	0.06				
WG403429LFB	LFB	05/23/16 15:33	II160516-4	1.0017		.993	mg/L	99	85	115			
L30583-01AS	AS	05/23/16 16:37	II160516-4	1.0017	U	.98	mg/L	98	85	115			
L30583-01ASD	ASD	05/23/16 16:40	II160516-4	1.0017	U	1.023	mg/L	102	85	115	4	20	

**Golder Associates**

 ACZ Project ID: **L30572**
**Lead, dissolved**
**M200.8 ICP-MS**

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG403522</b>													
WG403522ICV	ICV	05/24/16 21:56	MS160419-12	.05		.05389	mg/L	108	90	110			
WG403522ICB	ICB	05/24/16 21:59				U	mg/L		-0.0003	0.0003			
WG403522LFB	LFB	05/24/16 22:03	MS160510-5	.05005		.04641	mg/L	93	85	115			
L30576-03AS	AS	05/24/16 22:18	MS160510-5	.1001	U	.10288	mg/L	103	70	130			
L30576-03ASD	ASD	05/24/16 22:21	MS160510-5	.1001	U	.10194	mg/L	102	70	130	1	20	

**Magnesium, dissolved**
**M200.7 ICP**

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG403429</b>													
WG403429ICV	ICV	05/23/16 15:15	II160512-1	100		99.28	mg/L	99	95	105			
WG403429ICB	ICB	05/23/16 15:21				U	mg/L		-0.6	0.6			
WG403429LFB	LFB	05/23/16 15:33	II160516-4	49.99998		48.52	mg/L	97	85	115			
L30583-01AS	AS	05/23/16 16:37	II160516-4	49.99998	22.4	69.73	mg/L	95	85	115			
L30583-01ASD	ASD	05/23/16 16:40	II160516-4	49.99998	22.4	70.38	mg/L	96	85	115	1	20	

**Manganese, dissolved**
**M200.7 ICP**

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG403429</b>													
WG403429ICV	ICV	05/23/16 15:15	II160512-1	2		1.9292	mg/L	96	95	105			
WG403429ICB	ICB	05/23/16 15:21				U	mg/L		-0.015	0.015			
WG403429LFB	LFB	05/23/16 15:33	II160516-4	.5		.5016	mg/L	100	85	115			
L30583-01AS	AS	05/23/16 16:37	II160516-4	.5	.203	.6894	mg/L	97	85	115			
L30583-01ASD	ASD	05/23/16 16:40	II160516-4	.5	.203	.7094	mg/L	101	85	115	3	20	

**Mercury, dissolved**
**M245.1 CVAA**

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG403529</b>													
WG403529ICV	ICV	05/26/16 9:02	HG160510-2	.005		.00509	mg/L	102	95	105			
WG403529ICB	ICB	05/26/16 9:05				U	mg/L		-0.0002	0.0002			
<b>WG403559</b>													
WG403559LRB	LRB	05/26/16 10:13				U	mg/L		-0.00044	0.00044			
WG403559LFB	LFB	05/26/16 10:15	HG160518-2	.002002		.00199	mg/L	99	85	115			
L30561-02LFM	LFM	05/26/16 10:47	HG160518-2	.002002	U	.00196	mg/L	98	85	115			
L30561-02LFMD	LFMD	05/26/16 10:49	HG160518-2	.002002	U	.00185	mg/L	92	85	115	6	20	

**Molybdenum, dissolved**
**M200.7 ICP**

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG403429</b>													
WG403429ICV	ICV	05/23/16 15:15	II160512-1	2		1.965	mg/L	98	95	105			
WG403429ICB	ICB	05/23/16 15:21				U	mg/L		-0.06	0.06			
WG403429LFB	LFB	05/23/16 15:33	II160516-4	.4995		.481	mg/L	96	85	115			
L30583-01AS	AS	05/23/16 16:37	II160516-4	.4995	.04	.501	mg/L	92	85	115			
L30583-01ASD	ASD	05/23/16 16:40	II160516-4	.4995	.04	.507	mg/L	93	85	115	1	20	

**Golder Associates**

 ACZ Project ID: **L30572**
**Nickel, dissolved**
**M200.7 ICP**

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG403429</b>													
WG403429ICV	ICV	05/23/16 15:15	II160512-1	2		2.0005	mg/L	100	95	105			
WG403429ICB	ICB	05/23/16 15:21			U		mg/L		-0.024	0.024			
WG403429LFB	LFB	05/23/16 15:33	II160516-4	.501		.5029	mg/L	100	85	115			
L30583-01AS	AS	05/23/16 16:37	II160516-4	.501	U	.4876	mg/L	97	85	115			
L30583-01ASD	ASD	05/23/16 16:40	II160516-4	.501	U	.5082	mg/L	101	85	115	4	20	

**Nitrate/Nitrite as N, dissolved**
**M353.2 - Automated Cadmium Reduction**

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG403368</b>													
WG403368ICV	ICV	05/20/16 20:01	WI160304-5	2.416		2.501	mg/L	104	90	110			
WG403368ICB	ICB	05/20/16 20:02			U		mg/L		-0.02	0.02			
L30568-01AS	AS	05/20/16 20:09	WI151215-9	2	.04	2.049	mg/L	100	90	110			
L30568-02DUP	DUP	05/20/16 20:11			2.17	2.166	mg/L				0	20	
WG403368LFB	LFB	05/20/16 20:15	WI151215-9	2		2.056	mg/L	103	90	110			

**Nitrite as N, dissolved**
**M353.2 - Automated Cadmium Reduction**

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG403368</b>													
WG403368ICV	ICV	05/20/16 20:01	WI160304-5	.609		.637	mg/L	105	90	110			
WG403368ICB	ICB	05/20/16 20:02			U		mg/L		-0.01	0.01			
L30568-01AS	AS	05/20/16 20:09	WI151215-9	1	U	1.031	mg/L	103	90	110			
L30568-02DUP	DUP	05/20/16 20:11			.19	.189	mg/L				1	20	
WG403368LFB	LFB	05/20/16 20:15	WI151215-9	1		1.044	mg/L	104	90	110			

**pH (lab)**
**SM4500H+ B**

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG403366</b>													
WG403366LCSW1	LCSW	05/20/16 18:18	PCN49792	5.99		5.9	units	98	5.9	6.1			
WG403366LCSW4	LCSW	05/20/16 22:00	PCN49792	5.99		6	units	100	5.9	6.1			
WG403366LCSW7	LCSW	05/21/16 1:29	PCN49792	5.99		6	units	100	5.9	6.1			
L30576-01DUP	DUP	05/21/16 3:30			8.2	8.2	units				0	20	
WG403366LCSW10	LCSW	05/21/16 4:36	PCN49792	5.99		6	units	100	5.9	6.1			
WG403366LCSW13	LCSW	05/21/16 8:13	PCN49792	5.99		6	units	100	5.9	6.1			

**Phosphorus, ortho dissolved**
**M365.1 - Automated Ascorbic Acid**

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG403369</b>													
WG403369ICV	ICV	05/20/16 20:21	WI160503-9	.6523		.655	mg/L	100	90	110			
WG403369ICB	ICB	05/20/16 20:22			U		mg/L		-0.02	0.02			
WG403369LFB	LFB	05/20/16 20:24	WI160519-2	.5		.516	mg/L	103	90	110			
L30571-01AS	AS	05/20/16 20:27	WI160519-2	.5	U	.552	mg/L	110	90	110			
L30571-02DUP	DUP	05/20/16 20:29			U	U	mg/L				0	20	RA

**Golder Associates**

 ACZ Project ID: **L30572**
**Potassium, dissolved**
**M200.7 ICP**

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG403429</b>													
WG403429ICV	ICV	05/23/16 15:15	II160512-1	20		19.98	mg/L	100	95	105			
WG403429ICB	ICB	05/23/16 15:21			U	mg/L		-0.6	0.6				
WG403429LFB	LFB	05/23/16 15:33	II160516-4	99.96008		100.6	mg/L	101	85	115			
L30583-01AS	AS	05/23/16 16:37	II160516-4	99.96008	10.8	112.3	mg/L	102	85	115			
L30583-01ASD	ASD	05/23/16 16:40	II160516-4	99.96008	10.8	112.6	mg/L	102	85	115	0	20	

**Residue, Filterable (TDS) @180C**
**SM2540C**

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG403602</b>													
WG403602PBW	PBW	05/25/16 15:30				U	mg/L		-20	20			
WG403602LCSW	LCSW	05/25/16 15:32	PCN51023	260		260	mg/L	100	80	120			
L30647-02DUP	DUP	05/25/16 16:01			U	U	mg/L				0	10	RA

**Selenium, dissolved**
**M200.8 ICP-MS**

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG403522</b>													
WG403522ICV	ICV	05/24/16 21:56	MS160419-12	.05		.05187	mg/L	104	90	110			
WG403522ICB	ICB	05/24/16 21:59			U	mg/L		-0.0003	0.0003				
WG403522LFB	LFB	05/24/16 22:03	MS160510-5	.0501		.04542	mg/L	91	85	115			
L30576-03AS	AS	05/24/16 22:18	MS160510-5	.1002	U	.10694	mg/L	107	70	130			
L30576-03ASD	ASD	05/24/16 22:21	MS160510-5	.1002	U	.10694	mg/L	107	70	130	0	20	

**Silica, dissolved**
**M200.7 ICP**

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG403429</b>													
WG403429ICV	ICV	05/23/16 15:15	II160512-1	42.8		41.22	mg/L	96	95	105			
WG403429ICB	ICB	05/23/16 15:21			U	mg/L		-0.6	0.6				
WG403429LFB	LFB	05/23/16 15:33	II160516-4	21.415		21.65	mg/L	101	85	115			
L30583-01AS	AS	05/23/16 16:37	II160516-4	21.415	23.7	44.58	mg/L	98	85	115			
L30583-01ASD	ASD	05/23/16 16:40	II160516-4	21.415	23.7	45.66	mg/L	103	85	115	2	20	

**Silver, dissolved**
**M200.8 ICP-MS**

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG403522</b>													
WG403522ICV	ICV	05/24/16 21:56	MS160419-12	.02004		.02001	mg/L	100	90	110			
WG403522ICB	ICB	05/24/16 21:59			U	mg/L		-0.00015	0.00015				
WG403522LFB	LFB	05/24/16 22:03	MS160510-5	.01001		.009263	mg/L	93	85	115			
L30576-03AS	AS	05/24/16 22:18	MS160510-5	.02002	U	.01766	mg/L	88	70	130			
L30576-03ASD	ASD	05/24/16 22:21	MS160510-5	.02002	U	.01721	mg/L	86	70	130	3	20	

**Sodium, dissolved**
**M200.7 ICP**

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG403429</b>													
WG403429ICV	ICV	05/23/16 15:15	II160512-1	100		96.36	mg/L	96	95	105			
WG403429ICB	ICB	05/23/16 15:21			U	mg/L		-0.6	0.6				
WG403429LFB	LFB	05/23/16 15:33	II160516-4	100.0149		96.58	mg/L	97	85	115			
L30583-01AS	AS	05/23/16 16:37	II160516-4	100.0149	79.3	173.3	mg/L	94	85	115			
L30583-01ASD	ASD	05/23/16 16:40	II160516-4	100.0149	79.3	173.9	mg/L	95	85	115	0	20	

**Golder Associates**

 ACZ Project ID: **L30572**
**Sulfate**
**M300.0 - Ion Chromatography**

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG404021</b>													
WG404021ICV	ICV	06/01/16 15:41	WI160601-1	50		51.1	mg/L	102	90	110			
WG404021ICB	ICB	06/01/16 15:59				U	mg/L		-0.5	0.5			
WG404021LFB1	LFB	06/02/16 18:13	WI151103-3	30		30	mg/L	100	90	110			
L30572-01DUP	DUP	06/02/16 18:49			3240	3230	mg/L				0	20	
L30611-01AS	AS	06/02/16 19:25	WI151103-3	1500	310	1810	mg/L	100	90	110			
WG404021LFB2	LFB	06/03/16 2:53	WI151103-3	30		30	mg/L	100	90	110			

**Thallium, dissolved**
**M200.8 ICP-MS**

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG403522</b>													
WG403522ICV	ICV	05/24/16 21:56	MS160419-12	.05		.0534	mg/L	107	90	110			
WG403522ICB	ICB	05/24/16 21:59				U	mg/L		-0.0003	0.0003			
WG403522LFB	LFB	05/24/16 22:03	MS160510-5	.0501		.04601	mg/L	92	85	115			
L30576-03AS	AS	05/24/16 22:18	MS160510-5	.1002	U	.10354	mg/L	103	70	130			
L30576-03ASD	ASD	05/24/16 22:21	MS160510-5	.1002	U	.10256	mg/L	102	70	130	1	20	

**Uranium, total**
**M200.8 ICP-MS**

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG403618</b>													
WG403618ICV	ICV	05/25/16 17:45	MS160419-12	.05		.04875	mg/L	98	90	110			
WG403618ICB	ICB	05/25/16 17:48				U	mg/L		-0.0003	0.0003			
WG403499LRB	LRB	05/25/16 17:51				U	mg/L		-0.00022	0.00022			
WG403499LFB	LFB	05/25/16 17:54	MS160510-5	.05		.04556	mg/L	91	85	115			
L30549-07LFM	LFM	05/25/16 18:51	MS160510-5	.05	.1385	.1942	mg/L	111	70	130			
L30549-07LFMD	LFMD	05/25/16 18:54	MS160510-5	.05	.1385	.183	mg/L	89	70	130	6	20	

**Zinc, dissolved**
**M200.7 ICP**

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
<b>WG403429</b>													
WG403429ICV	ICV	05/23/16 15:15	II160512-1	2		1.953	mg/L	98	95	105			
WG403429ICB	ICB	05/23/16 15:21				U	mg/L		-0.03	0.03			
WG403429LFB	LFB	05/23/16 15:33	II160516-4	.4995		.51	mg/L	102	85	115			
L30583-01AS	AS	05/23/16 16:37	II160516-4	.4995	U	.489	mg/L	98	85	115			
L30583-01ASD	ASD	05/23/16 16:40	II160516-4	.4995	U	.492	mg/L	98	85	115	1	20	

Golder Associates

ACZ Project ID: **L30572**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L30572-01	WG403429	Calcium, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG403718	Chloride	M300.0 - Ion Chromatography	DC	Sample required dilution. Non-target analyte exceeded calibration range.
	WG403551	Fluoride	SM4500F-C	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
	WG403368	Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	H3	Sample was received and analyzed past holding time.
		Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	H3	Sample was received and analyzed past holding time.
	WG403369	Phosphorus, ortho dissolved	M365.1 - Automated Ascorbic Acid	H3	Sample was received and analyzed past holding time.
			M365.1 - Automated Ascorbic Acid	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG403602	Residue, Filterable (TDS) @180C	SM2540C	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).

**Golder Associates**

Project ID: 1547878.300  
Sample ID: DW-03

ACZ Sample ID: **L30572-01**  
Date Sampled: 05/18/16 8:20  
Date Received: 05/20/16  
Sample Matrix: *Ground Water*

**Diesel Range Organics (C10-C28)**

Analysis Method: **M8015D GC/FID**  
Extract Method: **M3520**

**Workgroup:** **WG403573**

Analyst: mmn  
Extract Date: 05/23/16 11:55  
Analysis Date: 05/25/16 21:37

Compound	CAS	Result	QUAL	Dilution	XQ	Units	MDL	PQL
TPH C10 to C28		0.14	J	0.93		mg/L	0.09	0.5
Surrogate Recoveries	CAS	% Recovery		Dilution	XQ	Units	LCL	UCL
OTP	84-15-1	85.5		0.93		%	70	130

**Arizona license number: AZ0102**

**Golder Associates**

Project ID: 1547878.300  
Sample ID: DW-03

ACZ Sample ID: **L30572-01**  
Date Sampled: 05/18/16 8:20  
Date Received: 05/20/16  
Sample Matrix: *Ground Water*

**Volatile Organics by GC/MS**

Analysis Method: **M8260B GC/MS**

Extract Method:

**Workgroup: WG403975**

Analyst: rgt

Extract Date:

Analysis Date: 06/01/16 16:53

Compound	CAS	Result	QUAL	Dilution	XQ	Units	MDL	PQL
1,1,1,2-Tetrachloroethane	630-20-6	U	1	*	ug/L	4	4	
1,1,1-Trichloroethane	71-55-6	U	1	*	ug/L	10	10	
1,1,2,2-Tetrachloroethane	79-34-5	U	1	*	ug/L	3	3	
1,1,2-Trichloroethane	79-00-5	U	1	*	ug/L	4	4	
1,1-Dichloroethane	75-34-3	U	1	*	ug/L	4	4	
1,1-Dichloroethene	75-35-4	U	1	*	ug/L	4	4	
1,1-Dichloropropene	563-58-6	U	1	*	ug/L	4	4	
1,2,3-Trichlorobenzene	87-61-6	U	1	*	ug/L	4	4	
1,2,3-Trichloropropane	96-18-4	U	1	*	ug/L	4	4	
1,2,4-Trichlorobenzene	120-82-1	U	1	*	ug/L	4	4	
1,2,4-Trimethylbenzene	95-63-6	U	1	*	ug/L	4	4	
1,2-Dibromo-3-chloropropane	96-12-8	U	1	*	ug/L	4	4	
1,2-Dibromoethane	106-93-4	U	1	*	ug/L	4	4	
1,2-Dichlorobenzene	95-50-1	U	1	*	ug/L	4	4	
1,2-Dichloroethane	107-06-2	U	1	*	ug/L	4	4	
1,2-Dichloropropane	78-87-5	U	1	*	ug/L	4	4	
1,3,5-Trimethylbenzene	108-67-8	U	1	*	ug/L	4	4	
1,3-Dichlorobenzene	541-73-1	U	1	*	ug/L	4	4	
1,3-Dichloropropane	142-28-9	U	1	*	ug/L	4	4	
1,4-Dichlorobenzene	106-46-7	U	1	*	ug/L	4	4	
2,2-Dichloropropane	594-20-7	U	1	*	ug/L	4	4	
2-Butanone	78-93-3	U	1	*	ug/L	10	10	
2-Chlorotoluene	95-49-8	U	1	*	ug/L	4	4	
2-Hexanone	591-78-6	U	1	*	ug/L	10	10	
4-Chlorotoluene	106-43-4	U	1	*	ug/L	4	4	
4-Isopropyltoluene	99-87-6	U	1	*	ug/L	4	4	
4-Methyl-2-Pentanone	108-10-1	U	1	*	ug/L	10	10	
Acetone	67-64-1	U	1	*	ug/L	10	10	
Acrylonitrile	107-13-1	U	1	*	ug/L	4	4	
Benzene	71-43-2	U	1	*	ug/L	4	4	
Bromobenzene	108-86-1	U	1	*	ug/L	4	4	
Bromochloromethane	74-97-5	U	1	*	ug/L	4	4	
Bromodichloromethane	75-27-4	U	1	*	ug/L	4	4	
Bromoform	75-25-2	U	1	*	ug/L	4	4	
Bromomethane	74-83-9	U	1	*	ug/L	4	4	
Carbon Disulfide	75-15-0	U	1	*	ug/L	4	4	
Carbon Tetrachloride	56-23-5	U	1	*	ug/L	10	10	
Chlorobenzene	108-90-7	U	1	*	ug/L	4	4	

**Golder Associates**

Project ID: 1547878.300  
 Sample ID: DW-03

ACZ Sample ID: **L30572-01**  
 Date Sampled: 05/18/16 8:20  
 Date Received: 05/20/16  
 Sample Matrix: *Ground Water*

Chloroethane	75-00-3	U	1	*	ug/L	4	4	
Chloroform	67-66-3	U	1	*	ug/L	4	4	
Chloromethane	74-87-3	U	1	*	ug/L	4	4	
cis-1,2-Dichloroethene	156-59-2	U	1	*	ug/L	4	4	
cis-1,3-Dichloropropene	10061-01-5	U	1	*	ug/L	4	4	
Dibromochloromethane	124-48-1	U	1	*	ug/L	4	4	
Dibromomethane	74-95-3	U	1	*	ug/L	4	4	
Dichlorodifluoromethane	75-71-8	U	1	*	ug/L	5	5	
Ethylbenzene	100-41-4	U	1	*	ug/L	4	4	
Hexachlorobutadiene	87-68-3	U	1	*	ug/L	4	4	
Isopropylbenzene	98-82-8	U	1	*	ug/L	4	4	
m p Xylene	1330-20-7	U	1	*	ug/L	10	10	
Methyl Tert Butyl Ether	1634-04-4	U	1	*	ug/L	4	4	
Methylene Chloride	75-09-2	U	1	*	ug/L	4	4	
Naphthalene	91-20-3	U	1	*	ug/L	4	4	
n-Butylbenzene	104-51-8	U	1	*	ug/L	4	4	
n-Propylbenzene	103-65-1	U	1	*	ug/L	4	4	
o Xylene	95-47-6	U	1	*	ug/L	4	4	
sec-Butylbenzene	135-98-8	U	1	*	ug/L	4	4	
Styrene	100-42-5	U	1	*	ug/L	4	4	
tert-Butylbenzene	98-06-6	U	1	*	ug/L	4	4	
Tetrachloroethene	127-18-4	U	1	*	ug/L	4	4	
Toluene	108-88-3	U	1	*	ug/L	4	4	
trans-1,2-Dichloroethene	156-60-5	U	1	*	ug/L	4	4	
trans-1,3-Dichloropropene	10061-02-6	U	1	*	ug/L	3	3	
Trichloroethene	79-01-6	U	1	*	ug/L	5	5	
Trichlorofluoromethane	75-69-4	U	1	*	ug/L	4	4	
Vinyl Acetate	108-05-4	U	1	*	ug/L	4	4	
Vinyl Chloride	75-01-4	U	1	*	ug/L	4	4	
Surrogate Recoveries	CAS	% Recovery		Dilution	XQ	Units	LCL	UCL
Bromofluorobenzene	460-00-4	96.4		1	*	%	70	130
Dibromofluoromethane	1868-53-7	98.1		1	*	%	70	130
Toluene-d8	2037-26-5	94.2		1	*	%	70	130

Arizona license number: **AZ0102**

**Report Header Explanations**

<i>Batch</i>	A distinct set of samples analyzed at a specific time
<i>Found</i>	Value of the QC Type of interest
<i>Limit</i>	Upper limit for RPD, in %.
<i>Lower</i>	Lower Recovery Limit, in % (except for LCSS, mg/Kg)
<i>LCL</i>	Lower Control Limit
<i>MDL</i>	Method Detection Limit. Same as Minimum Reporting Limit unless omitted or equal to the PQL (see comment #4) Allows for instrument and annual fluctuations.
<i>PCN/SCN</i>	A number assigned to reagents/standards to trace to the manufacturer's certificate of analysis
<i>PQL</i>	Practical Quantitation Limit. Synonymous with the EPA term "minimum level".
<i>QC</i>	True Value of the Control Sample or the amount added to the Spike
<i>Rec</i>	Amount of the true value or spike added recovered, in % (except for LCSS, mg/Kg)
<i>RPD</i>	Relative Percent Difference, calculation used for Duplicate QC Types
<i>Upper</i>	Upper Recovery Limit, in % (except for LCSS, mg/Kg)
<i>UCL</i>	Upper Control Limit
<i>Sample</i>	Value of the Sample of interest

**QC Sample Types**

<i>SURR</i>	Surrogate	<i>LFM</i>	Laboratory Fortified Matrix
<i>INTS</i>	Internal Standard	<i>LFMD</i>	Laboratory Fortified Matrix Duplicate
<i>DUP</i>	Sample Duplicate	<i>LRB</i>	Laboratory Reagent Blank
<i>LCSS</i>	Laboratory Control Sample - Soil	<i>MS/MSD</i>	Matrix Spike/Matrix Spike Duplicate
<i>LCSW</i>	Laboratory Control Sample - Water	<i>PBS</i>	Prep Blank - Soil
<i>LFB</i>	Laboratory Fortified Blank	<i>PBW</i>	Prep Blank - Water

**QC Sample Type Explanations**

<i>Blanks</i>	Verifies that there is no or minimal contamination in the prep method or calibration procedure.
<i>Control Samples</i>	Verifies the accuracy of the method, including the prep procedure.
<i>Duplicates</i>	Verifies the precision of the instrument and/or method.
<i>Spikes/Fortified Matrix</i>	Determines sample matrix interferences, if any.

**ACZ Qualifiers (Qual)**

<i>B</i>	Analyte concentration detected at a value between MDL and PQL. The associated value is an estimated quantity.
<i>O</i>	Analyte concentration is estimated due to result exceeding calibration range.
<i>H</i>	Analysis exceeded method hold time. pH is a field test with an immediate hold time.
<i>J</i>	Analyte concentration detected at a value between MDL and PQL. The associated value is an estimated quantity.
<i>L</i>	Target analyte response was below the laboratory defined negative threshold.
<i>U</i>	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit.

**Method References**

- (1) EPA 600/4-83-020. Methods for Chemical Analysis of Water and Wastes, March 1983.
- (2) EPA 600/4-90/020. Methods for the Determination of Organic Compounds in Drinking Water (I), July 1990.
- (3) EPA 600/R-92/129. Methods for the Determination of Organic Compounds in Drinking Water (II), July 1990.
- (4) EPA SW-846. Test Methods for Evaluating Solid Waste.
- (5) Standard Methods for the Examination of Water and Wastewater.

**Comments**

- (1) QC results calculated from raw data. Results may vary slightly if the rounded values are used in the calculations.
- (2) Excluding Oil & Grease, solid & biological matrices for organic analyses are reported on a wet weight basis.
- (3) An asterisk in the "XQ" column indicates there is an extended qualifier and/or certification qualifier associated with the result.
- (4) If the MDL equals the PQL or the MDL column is omitted, the PQL is the reporting limit.

For a complete list of ACZ's Extended Qualifiers, please click:

<http://www.acz.com/public/extquallist.pdf>

**Golder Associates**
**ACZ Project ID: L30572**
**Diesel Range Organics (C10-C28)**

M8015D GC/FID

**WG403573**

MS	Sample ID: L30516-01MS			PCN/SCN: OPTPH160509-2				Analyzed:		05/25/16 15:40	
Compound	QC	Sample		Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
TPH C10 TO C28	2502.7	U		2.067	mg/L	89.0	70	130			
OTP (surr)				%		93.6	70	130			
DUP	Sample ID: L30517-01DUP								Analyzed:		05/25/16 16:35
Compound	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual	
TPH C10 TO C28	.2	.2	mg/L					0	20	RA	
OTP (surr)		%			86.8	70	130				
LCSW	Sample ID: WG403419LCSW			PCN/SCN: OPTPH160509-2				Analyzed:		05/25/16 13:50	
Compound	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual	
TPH C10 TO C28	2502.7		2	mg/L	80.0	70	130				
OTP (surr)			%		89.6	70	130				
LCSWD	Sample ID: WG403419LCSWD			PCN/SCN: OPTPH160509-2				Analyzed:		05/25/16 14:18	
Compound	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual	
TPH C10 TO C28	2502.7		2.11	mg/L	84.0	70	130	5	20		
OTP (surr)			%		91.5	70	130				
PBW	Sample ID: WG403419PBW								Analyzed:		05/25/16 12:55
Compound	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual	
TPH C10 TO C28		U	mg/L			-.5	.5				
OTP (surr)		%			88.2	70	130				

**Golder Associates**
**ACZ Project ID: L30572**
**Volatile Organics by GC/MS**
**M8260B GC/MS**
**WG403975**

DUP	Sample ID: L30572-01DUP							Analyzed:		06/01/16 17:21	
Compound	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual	
1,1,1,2-TETRACHLOROETHANE	U	U	ug/L					0	20	RA	
1,1,1-TRICHLOROETHANE	U	U	ug/L					0	20	RA	
1,1,2,2-TETRACHLOROETHANE	U	U	ug/L					0	20	RA	
1,1,2-TRICHLOROETHANE	U	U	ug/L					0	20	RA	
1,1-DICHLOROETHANE	U	U	ug/L					0	20	RA	
1,1-DICHLOROETHENE	U	U	ug/L					0	20	RA	
1,1-DICHLOROPROPENE	U	U	ug/L					0	20	RA	
1,2,3-TRICHLOROBENZENE	U	U	ug/L					0	20	RA	
1,2,3-TRICHLOROPROPANE	U	U	ug/L					0	20	RA	
1,2,4-TRICHLOROBENZENE	U	U	ug/L					0	20	RA	
1,2,4-TRIMETHYLBENZENE	U	U	ug/L					0	20	RA	
1,2-DIBROMO-3-CHLOROPROPANE	U	U	ug/L					0	20	RA	
1,2-DIBROMOETHANE	U	U	ug/L					0	20	RA	
1,2-DICHLOROBENZENE	U	U	ug/L					0	20	RA	
1,2-DICHLOROETHANE	U	U	ug/L					0	20	RA	
1,2-DICHLOROPROPANE	U	U	ug/L					0	20	RA	
1,3,5-TRIMETHYLBENZENE	U	U	ug/L					0	20	RA	
1,3-DICHLOROBENZENE	U	U	ug/L					0	20	RA	
1,3-DICHLOROPROPANE	U	U	ug/L					0	20	RA	
1,4-DICHLOROBENZENE	U	U	ug/L					0	20	RA	
2,2-DICHLOROPROPANE	U	U	ug/L					0	20	RA	
2-BUTANONE	U	U	ug/L					0	20	RA	
2-CHLOROTOLUENE	U	U	ug/L					0	20	RA	
2-HEXANONE	U	U	ug/L					0	20	RA	
4-CHLOROTOLUENE	U	U	ug/L					0	20	RA	
4-ISOPROPYLTOLUENE	U	U	ug/L					0	20	RA	
4-METHYL-2-PENTANONE	U	U	ug/L					0	20	RA	
ACETONE	U	6	ug/L					200	20	RA	
ACRYLONITRILE	U	U	ug/L					0	20	RA	
BENZENE	U	U	ug/L					0	20	RA	
BROMOBENZENE	U	U	ug/L					0	20	RA	
BROMOCHLOROMETHANE	U	U	ug/L					0	20	RA	
BROMODICHLOROMETHANE	U	U	ug/L					0	20	RA	
BROMOFORM	U	U	ug/L					0	20	RA	
BROMOMETHANE	U	U	ug/L					0	20	RA	
CARBON DISULFIDE	U	U	ug/L					0	20	RA	
CARBON TETRACHLORIDE	U	U	ug/L					0	20	RA	
CHLOROBENZENE	U	U	ug/L					0	20	RA	
CHLOROETHANE	U	U	ug/L					0	20	RA	
CHLOROFORM	U	U	ug/L					0	20	RA	
CHLOROMETHANE	U	U	ug/L					0	20	RA	
CIS-1,2-DICHLOROETHENE	U	U	ug/L					0	20	RA	
CIS-1,3-DICHLOROPROPENE	U	U	ug/L					0	20	RA	
DIBROMOCHLOROMETHANE	U	U	ug/L					0	20	RA	

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DIBROMOMETHANE	U	.044	ug/L	200	20	RA
DICHLORODIFLUOROMETHANE	U	U	ug/L	0	20	RA
ETHYLBENZENE	U	U	ug/L	0	20	RA
HEXACHLOROBUTADIENE	U	U	ug/L	0	20	RA
IODOMETHANE		U	ug/L	0	20	
ISOPROPYLBENZENE	U	U	ug/L	0	20	RA
M P XYLENE	U	U	ug/L	0	20	RA
METHYL TERT BUTYL ETHER	U	U	ug/L	0	20	RA
METHYLENE CHLORIDE	U	U	ug/L	0	20	RA
NAPHTHALENE	U	U	ug/L	0	20	RA
N-BUTYLBENZENE	U	U	ug/L	0	20	RA
N-PROPYLBENZENE	U	U	ug/L	0	20	RA
O XYLENE	U	U	ug/L	0	20	RA
SEC-BUTYLBENZENE	U	U	ug/L	0	20	RA
STYRENE	U	U	ug/L	0	20	RA
TERT-BUTYLBENZENE	U	U	ug/L	0	20	RA
TETRACHLOROETHENE	U	U	ug/L	0	20	RA
TOLUENE	U	U	ug/L	0	20	RA
TRANS-1,2-DICHLOROETHENE	U	U	ug/L	0	20	RA
TRANS-1,3-DICHLOROPROPENE	U	U	ug/L	0	20	RA
TRANS-1,4-DICHLORO-2-BUTENE		U	ug/L	0	20	
TRICHLOROETHENE	U	U	ug/L	0	20	RA
TRICHLOROFLUOROMETHANE	U	U	ug/L	0	20	RA
VINYL ACETATE	U	U	ug/L	0	20	RA
VINYL CHLORIDE	U	.021	ug/L	200	20	RA
BROMOFLUOROBENZENE (surr)		%	96.8	70	130	
DIBROMOFLUOROMETHANE (surr)		%	99.4	70	130	
TOLUENE-D8 (surr)		%	93.8	70	130	

AS	Sample ID: L30703-01AS	PCN/SCN: V160531-1-CCV					Analyzed:		06/01/16 18:46		
		Compound	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit
1,1,1,2-TETRACHLOROETHANE	10	U	10.91	ug/L	109.0	70	130				
1,1,1-TRICHLOROETHANE	9.9	U	11.22	ug/L	113.0	70	130				
1,1,2,2-TETRACHLOROETHANE	10	U	10.524	ug/L	105.0	70	130				
1,1,2-TRICHLOROETHANE	10	U	10.59	ug/L	106.0	70	130				
1,1-DICHLOROETHANE	9.9	U	10.36	ug/L	105.0	70	130				
1,1-DICHLOROETHENE	10	U	9.74	ug/L	98.0	70	130				
1,1-DICHLOROPROPENE	10	U	11.15	ug/L	112.0	70	130				
1,2,3-TRICHLOROBENZENE	10	U	6.1	ug/L	61.0	70	130				M2
1,2,3-TRICHLOROPROPANE	10	U	9.51	ug/L	95.0	70	130				
1,2,4-TRICHLOROBENZENE	10	U	7.5	ug/L	75.0	70	130				
1,2,4-TRIMETHYLBENZENE	10	9	19.02	ug/L	100.0	70	130				
1,2-DIBROMO-3-CHLOROPROPANE	10	U	8.34	ug/L	83.0	70	130				
1,2-DIBROMOETHANE	10	U	9.977	ug/L	99.0	70	130				
1,2-DICHLOROBENZENE	10.1	U	10.02	ug/L	100.0	70	130				
1,2-DICHLOROETHANE	10.1	U	9.97	ug/L	99.0	70	130				
1,2-DICHLOROPROPANE	10	U	10.4	ug/L	104.0	70	130				
1,3,5-TRIMETHYLBENZENE	10	U	9.73	ug/L	97.0	70	130				
1,3-DICHLOROBENZENE	10.1	U	10.13	ug/L	101.0	70	130				

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1,3-DICHLOROPROPANE	9.9	U	10.17	ug/L	102.0	70	130	
1,4-DICHLOROBENZENE	10	U	10.03	ug/L	100.0	70	130	
2,2-DICHLOROPROPANE	9.9	U	11.66	ug/L	118.0	70	130	
2-BUTANONE	20	U	23.78	ug/L	119.0	70	130	
2-CHLOROTOLUENE	10	U	9.88	ug/L	99.0	70	130	
2-HEXANONE	20.1	U	22.95	ug/L	114.0	70	130	
4-CHLOROTOLUENE	10	U	9.88	ug/L	99.0	70	130	
4-ISOPROPYLtoluene	10	U	8.3	ug/L	83.0	70	130	
4-METHYL-2-PENTANONE	20	U	25.7	ug/L	128.0	70	130	
ACETONE	20	10	28.4	ug/L	92.0	70	130	
ACRYLONITRILE	10	U	8.292	ug/L	83.0	70	130	
BENZENE	10	U	10.58	ug/L	106.0	70	130	
BROMOBENZENE	10	U	9.99	ug/L	100.0	70	130	
BROMOCHLOROMETHANE	10	U	9.64	ug/L	96.0	70	130	
BROMODICHLOROMETHANE	10.1	U	11.03	ug/L	109.0	70	130	
BROMOFORM	10	U	10.76	ug/L	108.0	70	130	
BROMOMETHANE	10.1	U	13.06	ug/L	129.0	70	130	
CARBON DISULFIDE	10	U	11.62	ug/L	116.0	70	130	
CARBON TETRACHLORIDE	10	U	11.07	ug/L	111.0	70	130	
CHLOROBENZENE	10	U	10.73	ug/L	107.0	70	130	
CHLOROETHANE	9.9	U	10.9	ug/L	110.0	70	130	
CHLOROFORM	10	U	11.19	ug/L	112.0	70	130	
CHLOROMETHANE	9.9	U	11.62	ug/L	117.0	70	130	
CIS-1,2-DICHLOROETHENE	9.9	U	9.98	ug/L	100.0	70	130	
CIS-1,3-DICHLOROPROPENE	10	U	10.17	ug/L	102.0	70	130	
DIBROMOCHLOROMETHANE	10	U	11.09	ug/L	110.0	70	130	
DIBROMOMETHANE	10	U	10.628	ug/L	106.0	70	130	
DICHLORODIFLUOROMETHANE	10	U	14.84	ug/L	149.0	70	130	M1
ETHYLBENZENE	10	U	10.38	ug/L	104.0	70	130	
HEXAChlorobutadiene	10	U	4.2	ug/L	42.0	70	130	M2
IODOMETHANE	10		11.78	ug/L	118.0	70	130	
ISOPROPYLBENZENE	10	U	9.75	ug/L	97.0	70	130	
M P XYLENE	20	U	21	ug/L	105.0	70	130	
METHYL TERT BUTYL ETHER	10	U	9.78	ug/L	98.0	70	130	
METHYLENE CHLORIDE	10	U	9.51	ug/L	95.0	70	130	
NAPHTHALENE	10	15	23.5	ug/L	85.0	70	130	
N-BUTYLBENZENE	10	U	8.54	ug/L	85.0	70	130	
N-PROPYLBENZENE	10	U	9.11	ug/L	91.0	70	130	
O XYLENE	10	U	10.2	ug/L	102.0	70	130	
SEC-BUTYLBENZENE	10	U	8.33	ug/L	83.0	70	130	
STYRENE	10	U	10.09	ug/L	100.0	70	130	
TERT-BUTYLBENZENE	10	U	8.83	ug/L	88.0	70	130	
TETRAChLOROETHENE	10.1	U	10.7	ug/L	106.0	71	130	
TOLUENE	10	U	10.76	ug/L	108.0	70	130	
TRANS-1,2-DICHLOROETHENE	10	U	9.95	ug/L	99.0	70	130	
TRANS-1,3-DICHLOROPROPENE	10	U	9.98	ug/L	100.0	70	130	
TRANS-1,4-DICHLORO-2-BUTENE	10.1		7.15	ug/L	71.0	70	130	
TRICHLOROETHENE	10	U	10.59	ug/L	105.0	71	130	
TRICHLOROFLUOROMETHANE	10	U	11.41	ug/L	114.0	70	130	

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VINYL ACETATE	10	U	12.05	ug/L	120.0	70	130
VINYL CHLORIDE	10	U	9.553	ug/L	95.0	70	130
BROMOFLUOROBENZENE (surr)			%		99.1	70	130
DIBROMOFLUOROMETHANE (surr)			%		98.4	70	130
TOLUENE-D8 (surr)			%		94.7	70	130

**LCSW              Sample ID: WG403975LCSW              PCN/SCN: V160531-1-CCV              Analyzed: 06/01/16 10:22**

Compound	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
1,1,1,2-TETRACHLOROETHANE	10		10.28	ug/L	103.0	70	130			
1,1,1-TRICHLOROETHANE	9.9		9.93	ug/L	100.0	70	130			
1,1,2,2-TETRACHLOROETHANE	10		10.288	ug/L	103.0	70	130			
1,1,2-TRICHLOROETHANE	10		10.22	ug/L	102.0	70	130			
1,1-DICHLOROETHANE	9.9		9.74	ug/L	99.0	70	130			
1,1-DICHLOROETHENE	10		8.64	ug/L	87.0	70	130			
1,1-DICHLOROPROPENE	10		9.89	ug/L	99.0	70	130			
1,2,3-TRICHLOROBENZENE	10		9.5	ug/L	95.0	70	130			
1,2,3-TRICHLOROPROPANE	10		9.49	ug/L	95.0	70	130			
1,2,4-TRICHLOROBENZENE	10		10	ug/L	100.0	70	130			
1,2,4-TRIMETHYLBENZENE	10		9.36	ug/L	94.0	70	130			
1,2-DIBROMO-3-CHLOROPROPANE	10		9.54	ug/L	95.0	70	130			
1,2-DIBROMOETHANE	10		9.689	ug/L	97.0	70	130			
1,2-DICHLOROBENZENE	10.1		10.37	ug/L	103.0	70	130			
1,2-DICHLOROETHANE	10.1		9.56	ug/L	95.0	70	130			
1,2-DICHLOROPROPANE	10		9.24	ug/L	92.0	70	130			
1,3,5-TRIMETHYLBENZENE	10		9.56	ug/L	95.0	70	130			
1,3-DICHLOROBENZENE	10.1		10.37	ug/L	103.0	70	130			
1,3-DICHLOROPROPANE	9.9		9.96	ug/L	100.0	70	130			
1,4-DICHLOROBENZENE	10		10.19	ug/L	102.0	70	130			
2,2-DICHLOROPROPANE	9.9		11.1	ug/L	112.0	70	130			
2-BUTANONE	20		20.05	ug/L	100.0	70	130			
2-CHLOROTOLUENE	10		9.85	ug/L	98.0	70	130			
2-HEXANONE	20.1		20.93	ug/L	104.0	70	130			
4-CHLOROTOLUENE	10		9.92	ug/L	99.0	70	130			
4-ISOPROPYLTOluENE	10		9.65	ug/L	96.0	70	130			
4-METHYL-2-PENTANONE	20		18.67	ug/L	93.0	70	130			
ACETONE	20		21	ug/L	105.0	70	130			
ACRYLONITRILE	10		9.221	ug/L	92.0	70	130			
BENZENE	10		9.82	ug/L	98.0	70	130			
BROMOBENZENE	10		9.79	ug/L	98.0	70	130			
BROMOCHLOROMETHANE	10		9.53	ug/L	95.0	70	130			
BROMODICHLOROMETHANE	10.1		10.26	ug/L	102.0	70	130			
BROMOFORM	10		10.75	ug/L	107.0	70	130			
BROMOMETHANE	10.1		11.98	ug/L	118.0	70	130			
CARBON DISULFIDE	10		9.8	ug/L	98.0	70	130			
CARBON TETRACHLORIDE	10		10.13	ug/L	101.0	70	130			
CHLOROBENZENE	10		10.23	ug/L	102.0	70	130			
CHLOROETHANE	9.9		9.54	ug/L	96.0	70	130			
CHLOROFORM	10		10.08	ug/L	101.0	70	130			
CHLOROMETHANE	9.9		10.64	ug/L	107.0	70	130			

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CIS-1,2-DICHLOROETHENE	9.9	9.34	ug/L	94.0	70	130	
CIS-1,3-DICHLOROPROPENE	10	9.74	ug/L	98.0	70	130	
DIBROMOCHLOROMETHANE	10	10.77	ug/L	107.0	70	130	
DIBROMOMETHANE	10	10.146	ug/L	102.0	70	130	
DICHLORODIFLUOROMETHANE	10	12.57	ug/L	126.0	70	130	
ETHYLBENZENE	10	9.93	ug/L	99.0	70	130	
HEXACHLOROBUTADIENE	10	10.2	ug/L	102.0	70	130	
IODOMETHANE	10	10.15	ug/L	102.0	70	130	
ISOPROPYLBENZENE	10	9.79	ug/L	98.0	70	130	
M P XYLENE	20	20.07	ug/L	100.0	70	130	
METHYL TERT BUTYL ETHER	10	9.46	ug/L	94.0	70	130	
METHYLENE CHLORIDE	10	9.12	ug/L	91.0	70	130	
NAPHTHALENE	10	9.1	ug/L	91.0	70	130	
N-BUTYLBENZENE	10	9.51	ug/L	95.0	70	130	
N-PROPYLBENZENE	10	9.41	ug/L	94.0	70	130	
O XYLENE	10	9.84	ug/L	98.0	70	130	
SEC-BUTYLBENZENE	10	9.8	ug/L	98.0	70	130	
STYRENE	10	9.96	ug/L	99.0	70	130	
TERT-BUTYLBENZENE	10	9.56	ug/L	96.0	70	130	
TETRACHLOROETHENE	10.1	10.21	ug/L	101.0	71	130	
TOLUENE	10	9.84	ug/L	98.0	70	130	
TRANS-1,2-DICHLOROETHENE	10	9.1	ug/L	91.0	70	130	
TRANS-1,3-DICHLOROPROPENE	10	9.64	ug/L	97.0	70	130	
TRANS-1,4-DICHLORO-2-BUTENE	10.1	8.36	ug/L	83.0	70	130	
TRICHLOROETHENE	10	9.59	ug/L	96.0	71	130	
TRICHLOROFLUOROMETHANE	10	9.95	ug/L	100.0	70	130	
VINYL ACETATE	10	13.24	ug/L	132.0	70	130	
VINYL CHLORIDE	10	8.454	ug/L	84.0	70	130	LA
BROMOFLUOROBENZENE (surr)		%		96.4	70	130	
DIBROMOFLUOROMETHANE (surr)		%		98.3	70	130	
TOLUENE-D8 (surr)		%		94.7	70	130	

LCSWD	Sample ID: WG403975LCSWD		PCN/SCN: V160531-1-CCV				Analyzed:		06/01/16 10:54	
Compound	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
1,1,1,2-TETRACHLOROETHANE	10		10.34	ug/L	103.0	70	130	1	20	
1,1,1-TRICHLOROETHANE	9.9		9.72	ug/L	98.0	70	130	2	20	
1,1,2,2-TETRACHLOROETHANE	10		10.316	ug/L	103.0	70	130	0	20	
1,1,2-TRICHLOROETHANE	10		10.14	ug/L	101.0	70	130	1	20	
1,1-DICHLOROETHANE	9.9		9.38	ug/L	95.0	70	130	4	20	
1,1-DICHLOROETHENE	10		8.35	ug/L	84.0	70	130	3	20	
1,1-DICHLOROPROPENE	10		9.7	ug/L	97.0	70	130	2	20	
1,2,3-TRICHLOROBENZENE	10		9.8	ug/L	98.0	70	130	3	20	
1,2,3-TRICHLOROPROPANE	10		9.6	ug/L	96.0	70	130	1	20	
1,2,4-TRICHLOROBENZENE	10		10.1	ug/L	101.0	70	130	1	20	
1,2,4-TRIMETHYLBENZENE	10		9.4	ug/L	94.0	70	130	0	20	
1,2-DIBROMO-3-CHLOROPROPANE	10		9.38	ug/L	94.0	70	130	2	20	
1,2-DIBROMOETHANE	10		9.686	ug/L	97.0	70	130	0	20	
1,2-DICHLOROBENZENE	10.1		10.48	ug/L	104.0	70	130	1	20	
1,2-DICHLOROETHANE	10.1		9.46	ug/L	94.0	70	130	1	20	

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1,2-DICHLOROPROPANE	10	9.32	ug/L	93.0	70	130	1	20
1,3,5-TRIMETHYLBENZENE	10	9.51	ug/L	95.0	70	130	1	20
1,3-DICHLOROBENZENE	10.1	10.32	ug/L	103.0	70	130	0	20
1,3-DICHLOROPROPANE	9.9	9.81	ug/L	99.0	70	130	2	20
1,4-DICHLOROBENZENE	10	10.21	ug/L	102.0	70	130	0	20
2,2-DICHLOROPROPANE	9.9	10.73	ug/L	108.0	70	130	3	20
2-BUTANONE	20	19.56	ug/L	98.0	70	130	2	20
2-CHLOROTOLUENE	10	9.8	ug/L	98.0	70	130	1	20
2-HEXANONE	20.1	20.83	ug/L	104.0	70	130	0	20
4-CHLOROTOLUENE	10	9.77	ug/L	98.0	70	130	2	20
4-ISOPROPYLTOLUENE	10	9.51	ug/L	95.0	70	130	1	20
4-METHYL-2-PENTANONE	20	18.3	ug/L	91.0	70	130	2	20
ACETONE	20	20.6	ug/L	103.0	70	130	2	20
ACRYLONITRILE	10	9.082	ug/L	91.0	70	130	2	20
BENZENE	10	9.62	ug/L	96.0	70	130	2	20
BROMOBENZENE	10	9.7	ug/L	97.0	70	130	1	20
BROMOCHLOROMETHANE	10	9.25	ug/L	92.0	70	130	3	20
BROMODICHLOROMETHANE	10.1	10.27	ug/L	102.0	70	130	0	20
BROMOFORM	10	10.63	ug/L	106.0	70	130	1	20
BROMOMETHANE	10.1	11.76	ug/L	116.0	70	130	2	20
CARBON DISULFIDE	10	9.36	ug/L	93.0	70	130	5	20
CARBON TETRACHLORIDE	10	9.8	ug/L	98.0	70	130	3	20
CHLOROBENZENE	10	10.18	ug/L	102.0	70	130	0	20
CHLOROETHANE	9.9	9.28	ug/L	94.0	70	130	3	20
CHLOROFORM	10	9.86	ug/L	98.0	70	130	2	20
CHLOROMETHANE	9.9	10.36	ug/L	105.0	70	130	3	20
CIS-1,2-DICHLOROETHENE	9.9	9.22	ug/L	93.0	70	130	1	20
CIS-1,3-DICHLOROPROPENE	10	9.78	ug/L	98.0	70	130	0	20
DIBROMOCHLOROMETHANE	10	10.71	ug/L	107.0	70	130	1	20
DIBROMOMETHANE	10	10.186	ug/L	102.0	70	130	0	20
DICHLORODIFLUOROMETHANE	10	12.31	ug/L	124.0	70	130	2	20
ETHYLBENZENE	10	9.86	ug/L	99.0	70	130	1	20
HEXAChLOROBUTADIENE	10	10.4	ug/L	104.0	70	130	2	20
IODOMETHANE	10	10.42	ug/L	104.0	70	130	3	20
ISOPROPYLBENZENE	10	9.63	ug/L	96.0	70	130	2	20
M P XYLENE	20	19.71	ug/L	99.0	70	130	2	20
METHYL TERT BUTYL ETHER	10	9.5	ug/L	95.0	70	130	0	20
METHYLENE CHLORIDE	10	8.98	ug/L	90.0	70	130	2	20
NAPHTHALENE	10	9.6	ug/L	96.0	70	130	5	20
N-BUTYLBENZENE	10	9.46	ug/L	94.0	70	130	1	20
N-PROPYLBENZENE	10	9.27	ug/L	92.0	70	130	1	20
O XYLENE	10	9.76	ug/L	98.0	70	130	1	20
SEC-BUTYLBENZENE	10	9.63	ug/L	96.0	70	130	2	20
STYRENE	10	9.85	ug/L	98.0	70	130	1	20
TERT-BUTYLBENZENE	10	9.48	ug/L	95.0	70	130	1	20
TETRACHLOROETHENE	10.1	9.94	ug/L	98.0	70	130	3	20
TOLUENE	10	9.65	ug/L	97.0	70	130	2	20
TRANS-1,2-DICHLOROETHENE	10	8.79	ug/L	88.0	70	130	3	20
TRANS-1,3-DICHLOROPROPENE	10	9.65	ug/L	97.0	70	130	0	20

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TRANS-1,4-DICHLORO-2-BUTENE	10.1	8.4	ug/L	83.0	70	130	0	20
TRICHLOROETHENE	10	9.46	ug/L	94.0	71	130	1	20
TRICHLOROFLUOROMETHANE	10	9.68	ug/L	97.0	70	130	3	20
VINYL ACETATE	10	12.87	ug/L	128.0	70	130	3	20
VINYL CHLORIDE	10	8.283	ug/L	82.0	70	130	2	20
BROMOFLUOROBENZENE (surr)		%		98.4	70	130		
DIBROMOFLUOROMETHANE (surr)		%		97.9	70	130		
TOLUENE-D8 (surr)		%		94.6	70	130		

PBW	Sample ID: WG403975PBW							Analyzed:	06/01/16 12:33	
Compound	QC	Sample	Found	Units	Rec	Lower	Upper	RPD	Limit	Qual
1,1,1,2-TETRACHLOROETHANE			U	ug/L		-1	1			
1,1,1-TRICHLOROETHANE			U	ug/L		-2	2			
1,1,2,2-TETRACHLOROETHANE			U	ug/L		-.01	.01			
1,1,2-TRICHLOROETHANE			U	ug/L		-1	1			
1,1-DICHLOROETHANE			U	ug/L		-1	1			
1,1-DICHLOROETHENE			U	ug/L		-1	1			
1,1-DICHLOROPROPENE			U	ug/L		-1	1			
1,2,3-TRICHLOROBENZENE			U	ug/L		-4	4			
1,2,3-TRICHLOROPROPANE			U	ug/L		-1	1			
1,2,4-TRICHLOROBENZENE			U	ug/L		-4	4			
1,2,4-TRIMETHYLBENZENE			U	ug/L		-1	1			
1,2-DIBROMO-3-CHLOROPROPANE			U	ug/L		-1	1			
1,2-DIBROMOETHANE			U	ug/L		-.01	.01			
1,2-DICHLOROBENZENE			U	ug/L		-1	1			
1,2-DICHLOROETHANE			U	ug/L		-1	1			
1,2-DICHLOROPROPANE			U	ug/L		-1	1			
1,3,5-TRIMETHYLBENZENE			U	ug/L		-1	1			
1,3-DICHLOROBENZENE			U	ug/L		-1	1			
1,3-DICHLOROPROPANE			U	ug/L		-1	1			
1,4-DICHLOROBENZENE			U	ug/L		-1	1			
2,2-DICHLOROPROPANE			U	ug/L		-1	1			
2-BUTANONE			U	ug/L		-2	2			
2-CHLOROTOLUENE			U	ug/L		-1	1			
2-HEXANONE			U	ug/L		-2	2			
4-CHLOROTOLUENE			U	ug/L		-1	1			
4-ISOPROPYL TOLUENE			U	ug/L		-1	1			
4-METHYL-2-PENTANONE			U	ug/L		-2	2			
ACETONE			U	ug/L		-4	4			
ACRYLONITRILE			U	ug/L		-.05	.05			
BENZENE			U	ug/L		-1	1			
BROMOBENZENE			U	ug/L		-1	1			
BROMOCHLOROMETHANE			U	ug/L		-1	1			
BROMODICHLOROMETHANE			U	ug/L		-1	1			
BROMOFORM			U	ug/L		-1	1			
BROMOMETHANE			U	ug/L		-2	2			
CARBON DISULFIDE			U	ug/L		-1	1			
CARBON TETRACHLORIDE			U	ug/L		-1	1			
CHLOROBENZENE			U	ug/L		-1	1			

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CHLOROETHANE	U	ug/L	-2	2	
CHLOROFORM	U	ug/L	-1	1	
CHLOROMETHANE	U	ug/L	-1	1	
CIS-1,2-DICHLOROETHENE	U	ug/L	-1	1	
CIS-1,3-DICHLOROPROPENE	U	ug/L	-1	1	
DIBROMOCHLOROMETHANE	U	ug/L	-1	1	
DIBROMOMETHANE	U	ug/L	-.01	.01	
DICHLORODIFLUOROMETHANE	U	ug/L	-1	1	
ETHYLBENZENE	U	ug/L	-1	1	
HEXACHLOROBUTADIENE	U	ug/L	-4	4	
IODOMETHANE	U	ug/L	-1	1	
ISOPROPYLBENZENE	U	ug/L	-1	1	
M P XYLENE	U	ug/L	-2	2	
METHYL TERT BUTYL ETHER	U	ug/L	-1	1	
METHYLENE CHLORIDE	U	ug/L	-1	1	
NAPHTHALENE	U	ug/L	-4	4	
N-BUTYLBENZENE	U	ug/L	-1	1	
N-PROPYLBENZENE	U	ug/L	-1	1	
O XYLENE	U	ug/L	-1	1	
SEC-BUTYLBENZENE	U	ug/L	-1	1	
STYRENE	U	ug/L	-1	1	
TERT-BUTYLBENZENE	U	ug/L	-1	1	
TETRACHLOROETHENE	U	ug/L	-1	1	
TOLUENE	U	ug/L	-1	1	
TRANS-1,2-DICHLOROETHENE	U	ug/L	-1	1	
TRANS-1,3-DICHLOROPROPENE	U	ug/L	-1	1	
TRANS-1,4-DICHLORO-2-BUTENE	U	ug/L	-1	1	
TRICHLOROETHENE	U	ug/L	-1	1	
TRICHLOROFLUOROMETHANE	U	ug/L	-1	1	
VINYL ACETATE	U	ug/L	-2	2	
VINYL CHLORIDE	.02	ug/L	-.05	.05	
BROMOFLUOROBENZENE (surr)		%	97.2	70	130
DIBROMOFLUOROMETHANE (surr)		%	98.6	70	130
TOLUENE-D8 (surr)		%	94.6	70	130

ACZ Project ID: L30572

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L30572-01	WG403975	*All Compounds*	M8260B GC/MS	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
		1,2,3-Trichlorobenzene	M8260B GC/MS	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
		Dichlorodifluoromethane	M8260B GC/MS	M1	Matrix spike recovery was high, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M8260B GC/MS	VC	CCV recovery was above the acceptance limits. Target analyte was not detected in the sample [< MDL].
		Hexachlorobutadiene	M8260B GC/MS	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
		Vinyl Acetate	M8260B GC/MS	LA	Recovery for target analyte in the control sample (LCS or LFB) exceeded the acceptance criteria. Target analyte was not detected in the sample [< MDL].
			M8260B GC/MS	VC	CCV recovery was above the acceptance limits. Target analyte was not detected in the sample [< MDL].

**Golder Associates**

Project ID: 1547878.300

Sample ID: DW-03

Locator:

 ACZ Sample ID: **L30572-01**

Date Sampled: 05/18/16 8:20

Date Received: 05/20/16

 Sample Matrix: *Ground Water*

Combined Radium

Prep Method:

Calculation (RA226 + RA228)

Parameter	Measure Date	Prep Date	Result	Error(+-)	LLD	Units	XQ	Analyst
Combined Radium	06/14/16 10:19		1.7	0.73		pCi/L		calc

Gross Alpha - Corrected

Prep Method:

Calculation

Parameter	Measure Date	Prep Date	Result	Error(+-)	LLD	Units	XQ	Analyst
Gross Alpha - Corrected	06/14/16 10:19		11.4			pCi/L		calc

Gross Alpha &amp; Beta, dissolved

Prep Method:

M900.0

Parameter	Measure Date	Prep Date	Result	Error(+-)	LLD	Units	XQ	Analyst
Gross Alpha	05/30/16 0:12		45	24	22	pCi/L	*	mhm
Gross Beta	05/30/16 0:12		32	25	33	pCi/L		mhm

Radium 226

Prep Method:

M903.1

Parameter	Measure Date	Prep Date	Result	Error(+-)	LLD	Units	XQ	Analyst
Radium 226	06/13/16 0:15		0.3	0.08	0.11	pCi/L		djc

Radium 228

Prep Method:

M904.0

Parameter	Measure Date	Prep Date	Result	Error(+-)	LLD	Units	XQ	Analyst
Radium 228	06/08/16 14:55		1.4	0.65	0.6	pCi/L	*	jjo

**Arizona license number: AZ0102**

**Report Header Explanations**

<i>Batch</i>	A distinct set of samples analyzed at a specific time
<i>Error(+/-)</i>	Calculated sample specific uncertainty
<i>Found</i>	Value of the QC Type of interest
<i>Limit</i>	Upper limit for RPD, in %.
<i>LCL</i>	Lower Control Limit, in % (except for LCSS, mg/Kg)
<i>LLD</i>	Calculated sample specific Lower Limit of Detection
<i>PCN/SCN</i>	A number assigned to reagents/standards to trace to the manufacturer's certificate of analysis
<i>PQL</i>	Practical Quantitation Limit
<i>QC</i>	True Value of the Control Sample or the amount added to the Spike
<i>Rec</i>	Amount of the true value or spike added recovered, in % (except for LCSS, mg/Kg)
<i>RER</i>	Relative Error Ratio, calculation used for Dup. QC taking into account the error factor.
<i>RPD</i>	Relative Percent Difference, calculation used for Duplicate QC Types
<i>UCL</i>	Upper Control Limit, in % (except for LCSS, mg/Kg)
<i>Sample</i>	Value of the Sample of interest

**QC Sample Types**

<i>DUP</i>	Sample Duplicate	<i>MS/MSD</i>	Matrix Spike/Matrix Spike Duplicate
<i>LCSS</i>	Laboratory Control Sample - Soil	<i>PBS</i>	Prep Blank - Soil
<i>LCSW</i>	Laboratory Control Sample - Water	<i>PBW</i>	Prep Blank - Water

**QC Sample Type Explanations**

Blanks	Verifies that there is no or minimal contamination in the prep method procedure.
Control Samples	Verifies the accuracy of the method, including the prep procedure.
Duplicates	Verifies the precision of the instrument and/or method.
Matrix Spikes	Determines sample matrix interferences, if any.

**ACZ Qualifiers (Qual)**

H	Analysis exceeded method hold time.
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**Method Prefix Reference**

M	EPA methodology, including those under SDWA, CWA, and RCRA
SM	Standard Methods for the Examination of Water and Wastewater.
D	ASTM
RP	DOE
ESM	DOE/ESM

**Comments**

- (1) Solid matrices are reported on a dry weight basis.
- (2) Preparation method: "Method" indicates preparation defined in analytical method.
- (3) QC results calculated from raw data. Results may vary slightly if the rounded values are used in the calculations.
- (4) An asterisk in the "XQ" column indicates there is an extended qualifier and/or certification qualifier associated with the result.

For a complete list of ACZ's Extended Qualifiers, please click:

<http://www.acz.com/public/extquallist.pdf>

Golder Associates

ACZ Project ID: **L30572**

**Alpha**

M900.0

**Units:** pCi/L

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Error	LLD	Found	Error	LLD	Rec	Lower	Upper	RPD/RER	Limit	Qual
<b>WG403801</b>																
WG403487PBW	PBW	05/30/16						.71	0.73	0.96			1.92			
WG403487LCSW	LCSW	05/30/16	PCN50099	100				110	9.3	1.5	110	83	133			
L30563-01DUP	DUP-RER	05/30/16			0.7	1.5	1.7	2.8	1.8	1.7				0.9	2	
L30602-01DUP	DUP-RER	05/30/16			0.92	1.3	2	.13	1.3	1.9				0.43	2	
L30572-01MS	MS	05/30/16	PCN50099	666.67	45	24	22	270	57	22	34	83	133			M2

**Beta**

M900.0

**Units:** pCi/L

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Error	LLD	Found	Error	LLD	Rec	Lower	Upper	RPD/RER	Limit	Qual
<b>WG403801</b>																
WG403487PBW	PBW	05/30/16						-.42	2	2.9			5.8			
WG403487LCSW	LCSW	05/30/16	PCN49858	100				110	7.2	4.3	110	70	129			
L30563-01DUP	DUP-RER	05/30/16			3.9	2.2	3.2	5.4	2.7	3.2				0.43	2	
L30602-01DUP	DUP-RER	05/30/16			-0.32	2.2	3.3	1.3	2.2	3.3				0.52	2	
L30572-01MS	MS	05/30/16	PCN49858	666.67	32	25	33	790	55	34	114	70	129			

**Radium 226**

M903.1

**Units:** pCi/L

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Error	LLD	Found	Error	LLD	Rec	Lower	Upper	RPD/RER	Limit	Qual
<b>WG404533</b>																
WG403735PBW	PBW	06/13/16						.07	0.05	0.08			0.16			
WG403735LCSW	LCSW	06/13/16	PCN51075	20				21	0.53	0.05	105	43	148			
L30514-05DUP	DUP-RER	06/13/16			1.3	0.15	0.08	1.1	0.12	0.15				1.04	2	
L30514-06MS	MS	06/13/16	PCN51075	20	0.08	0.06	0.04	15	0.42	0.15	75	43	148			

Golder Associates

ACZ Project ID: L30572

Radium 228 M904.0 Units: pCi/L

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Error	LLD	Found	Error	LLD	Rec	Lower	Upper	RPD/RER	Limit	Qual
<b>WG404289</b>																
WG403861LCSW	LCSW	06/07/16	PCN50557	19.18				11	0.97	0.47	57	47	123			
WG403861PBW	PBW	06/07/16						-.04	0.3	0.32			0.64			
L30514-07DUP	DUP-RER	06/08/16			0.42	0.46	0.46	2.6	0.76	0.64				2.45	2	RM
L30514-01DUP	DUP-RER	06/08/16			1.8	0.6	0.51	3.1	0.78	0.61				1.32	2	
L30537-02MS	MS	06/08/16	PCN50557	19.18	1.7	0.73	0.66	16	1.2	0.51	75	47	123			

Golder Associates

ACZ Project ID: **L30572**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
<b>L30572-01</b>	WG403801	Gross Alpha	M900.0	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
	WG404289	Radium 228	M904.0	RM	For a water matrix, the duplicate precision assessment (RPD or RER) exceeded the control limit. High sediment, turbidity, or presence of an immiscible liquid attributed to non-homogeneity of the sample.

Golder Associates

ACZ Project ID: L30572

No certification qualifiers associated with this analysis

**Golder Associates**  
 1547878.300

ACZ Project ID: L30572  
 Date Received: 05/20/2016 09:57  
 Received By: kmo  
 Date Printed: 5/20/2016

**Receipt Verification**

- 1) Is a foreign soil permit included for applicable samples?    X
- 2) Is the Chain of Custody form or other directive shipping papers present?
- 3) Does this project require special handling procedures such as CLP protocol?    X
- 4) Are any samples NRC licensable material?    X
- 5) If samples are received past hold time, proceed with requested short hold time analyses?
- 6) Is the Chain of Custody form complete and accurate?
- 7) Were any changes made to the Chain of Custody form prior to ACZ receiving the samples?

YES	NO	NA
		X
X		
		X
		X
X		
X		
	X	

**Samples/Containers**

- 8) Are all containers intact and with no leaks?
- 9) Are all labels on containers and are they intact and legible?
- 10) Do the sample labels and Chain of Custody form match for Sample ID, Date, and Time?
- 11) For preserved bottle types, was the pH checked and within limits? <sup>1</sup>
- 12) Is there sufficient sample volume to perform all requested work?
- 13) Is the custody seal intact on all containers?    X
- 14) Are samples that require zero headspace acceptable?
- 15) Are all sample containers appropriate for analytical requirements?
- 16) Is there an Hg-1631 trip blank present?    X
- 17) Is there a VOA trip blank present?    X
- 18) Were all samples received within hold time?

Some parameters were received past hold time.

YES	NO	NA
X		
X		
X		
X		
X		
		X
X		
X		
		X
	X	
	X	

**Chain of Custody Related Remarks**

**Client Contact Remarks**

**Shipping Containers**

Cooler Id	Temp (°C)	Temp Criteria (°C)	Rad (µR/Hr)	Custody Seal Intact?
4002	2.1	<=6.0	14	Yes

Was ice present in the shipment container(s)?

Yes - Wet ice was present in the shipment container(s).

Client must contact an ACZ Project Manager if analysis should not proceed for samples received outside of their thermal preservation acceptance criteria.

**Golder Associates**  
1547878.300

ACZ Project ID: L30572  
Date Received: 05/20/2016 09:57  
Received By: kmo  
Date Printed: 5/20/2016

<sup>1</sup> The preservation of the following bottle types is not checked at sample receipt: Orange (oil and grease), Purple (total cyanide), Pink (dissolved cyanide), Brown (arsenic speciation), Sterile (fecal coliform), EDTA (sulfite), HCl preserved vial (organics), Na<sub>2</sub>S<sub>2</sub>O<sub>3</sub> preserved vial (organics), and HG-1631 (total/dissolved mercury by method 1631).



**Table 1: Ambient Groundwater Monitoring Analytes**

Analyte	Method <sup>(a)</sup>	MRL <sup>(b,c)</sup>	AWQS <sup>(d)</sup>	Units
<b>Field Parameters</b>				
Specific Conductance	Field Instrument	NA	NS	umhos/cm
Temperature	Field Instrument	NA	NS	°C
pH	Field Instrument	NA	NS	SU
<b>Indicator Parameters</b>				
Total Dissolved Solids (TDS)	SM 2540C	1	NS	mg/L
Specific Conductance	SM 2510B	1	NS	umhos/cm
Temperature	EPA 170.1	--	NS	°C
pH	SM 4500H+	1	NS	SU
<b>Major Cations</b>				
Calcium (Ca)	EPA 200.7	1	NS	mg/L
Magnesium (Mg)	EPA 200.7	2	NS	mg/L
Potassium (K)	EPA 200.7	2	NS	mg/L
Sodium (Na)	EPA 200.7	2	NS	mg/L
<b>Major Anions</b>				
Carbonate (as CaCO <sub>3</sub> )	SM2320B	10	NS	mg/L
Bicarbonate (as CaCO <sub>3</sub> )	SM2320B	10	NS	mg/L
Hydroxide (as CaCO <sub>3</sub> )	SM2320B	10	NS	mg/L
Total Alkalinity (as CaCO <sub>3</sub> )	SM2320B	10	NS	mg/L
Chloride (Cl)	EPA 300.0	0	NS	mg/L
Fluoride (F)	SM 4500 F C	0.1	4.0	mg/L
Sulfate (SO <sub>4</sub> )	EPA 300.0	5	NS	mg/L
<b>Nitrogen</b>				
Nitrate + Nitrite (as N)	EPA 353.2	0.2	10	mg/L
Nitrate (as N)	Calculation	0.3	10	mg/L
Nitrite (as N)	EPA 353.2	0.1	1	mg/L
Phosphate (PO <sub>4</sub> )	EPA 365.3	0.1	NS	mg/L
<b>Metals (Dissolved)</b>				
Aluminum (Al)	EPA 200.7	0.2	NS	mg/L
Antimony (Sb)	EPA 200.8	0.003	0.006	mg/L
Arsenic (As)	EPA 200.8	0.001	0.05	mg/L
Barium (Ba)	EPA 200.7	0.01	2	mg/L
Beryllium (Be)	EPA 200.7	0.002	0.004	mg/L
Cadmium (Cd)	EPA 200.8	0.001	0.005	mg/L
Chromium (Cr)	EPA 200.7	0.001	0.1	mg/L
Cobalt (Co)	EPA 200.7	0.02	NS	mg/L
Copper (Cu)	EPA 200.7	0.01	NS	mg/L
Iron (Fe)	EPA 200.7	0.05	NS	mg/L
Lead (Pb)	EPA 200.8	0.001	0.05	mg/L
Manganese (Mn)	EPA 200.7	0.02	NS	mg/L
Mercury (Hg)	EPA 245.1	0.0002	0.002	mg/L
Molybdenum (Mo)	EPA 200.7	0.02	NS	mg/L
Nickel (Ni)	EPA 200.7	0.02	0.1	mg/L
Selenium (Se)	EPA 200.8	0.002	0.05	mg/L